

Claims

(1) An urethane oligomer(A) obtained by reacting a polyol compound(a) with a polybasic acid anhydride(b-1) having at least two acid anhydride groups per molecule, a polyisocyanate compound(c), and a hydroxy compound having ethylenically unsaturated groups and the salt thereof.

(2) An urethane oligomer(A) according to Claim (1), wherein said polybasic acid anhydride(b) having at least two acid anhydride groups per molecule has an acid value of 200-1500mgKOH/g and the salt thereof.

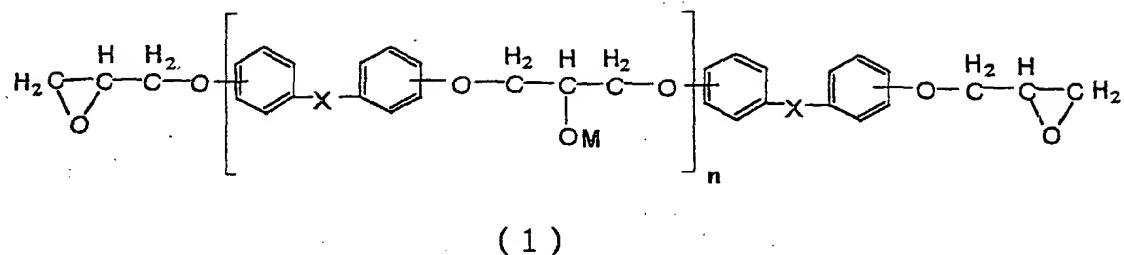
(3) An urethane oligomer(A) according to Claim (1) or (2),
wherein said urethane oligomer(A) has a weight-average
molecular weight of 1,000-100,000; and the salt thereof.

(4) An urethane oligomer(A) according to any of Claim (1) to (3), wherein said urethane oligomer(A) has an acid value of 1-200mgKOH/g and the salt thereof.

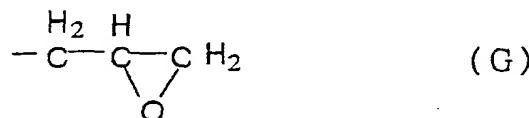
(5) A resin composition comprising an urethane oligomer(A) according to any of Claim (1) to (4) and an unsaturated group-containing polycarboxylic acid resin(B) that is a product obtained by reacting an epoxy resin (e) having at least two epoxy groups per molecule with a monocarboxylic acid compound(f) having ethylenically unsaturated groups and a polybasic acid anhydride(b-2).

(6) A resin composition according to Claim (5), wherein said epoxy resin (e) having at least two epoxy groups per molecule

is represented by Formula (1):



(In the formula, X is $-\text{CH}_2-$ or $-\text{C}(\text{CH}_3)_2-$, n is an integer of 1 or more, and M is hydrogen or a group represented by Formula (G) as shown below:



, provided that M is a group represented by Formula (G) if n is 1, while at least one M is a group represented by Formula (G) and each the remainders being hydrogen if n is an integer more than 1).

(7) A resin composition comprising an urethane oligomer(A) according to any of Claim (1) to (4) and a thermoplastic polymer(D).

(8) A resin composition according to Claim (5) or (6), comprising a diluent(C).

(9) A resin composition according to Claim (7) or (8), wherein said diluent(C) is a reactive diluent(C-1).

Sub A3

(10) A resin composition according to any of Claim (5) to (9) comprising a photopolymerization initiator(E).

(11) A resin composition comprising an urethane oligomer(A) according to any of Claim (1) to (4), a thermoplastic polymer(D) and a photopolymerization initiator(E).

(12) A resin composition according to Claim (11), wherein said thermoplastic polymer (D) is a polymer having carboxyl groups.

Sub A4

(13) A resin composition according to any of Claim (1) to (10) comprising a thermosetting component(F).

(14) A resin composition according to any of Claim (5) to (13), wherein said resin composition is prepared for the solder resist in a printed circuit board or for an interlayer dielectric layer.

(15) A photosensitive film comprising being prepared by laminating the layer of a resin composition according to any of Claim (10) to (14) on a supporting film.

(16) A photosensitive film according to Claim (15), wherein said photosensitive film is prepared for a printed circuit board.

Sub A5

(17) A cured product of the resin composition according to any of Claim (5) to (16).

(18) An article comprising having the layer of a cured product according to Claim (17).

(19) An article according to Claim (18), wherein said article is a printed circuit board.

(20) A two-liquid type of resin composition set comprising a

principal resin composition which contains (1) an urethane oligomer(A) or the salt thereof, (2) either an unsaturated group-containing polycarboxylic acid resin(B) or a thermoplastic polymer(D), and (3) a photopolymerization initiator(E) and a curing agent composition which contains a thermosetting component(F).